IN THE CLAIMS

1. (original) A method for configuring a router to run the OSPF protocol when said router is added to a network of existing routers running OSPF, comprising the steps of

analyzing said router to determine if it is not an area border router (ABR) or if it is already connected to a network backbone,

if said router or its neighboring router is an ABR and is not already connected to said network backbone, then attempting to establish a virtual link through said router to said network backbone, and

if a virtual link cannot be established through said router, establishing a virtual link through a neighbor of said router to said network backbone.

2. (original) The process of claim 1 wherein, if complete configuration is desired, performing the previously described process so that virtual links are established from both said router and its neighboring ABR.

3. (original) A method for automatically detecting and configuring virtual links in an OSPF router, comprising the steps of

analyzing a router to be added to an OSPF network to determine if it requires a link to a network backbone,

attempting to establish a virtual link through said router to said network backbone, and

if a virtual link cannot be established through said router, establishing a virtual link through a neighbor of said router to said network backbone.

4. (original) A method for reconfiguring OSPF protocol routers in an existing OSPF domain, wherein said routers are grouped into a plurality of areas, said method comprising the steps of

(a) analyzing area border routers (ABRs) in each said area, in turn, to determine if each area contains at least one ABR connected to the network backbone,

(b) if at least one ABR in an area is not connected to said backbone, establishing a virtual link between an ABR in said area and said backbone, and

(c) if complete configuration is desired, repeating steps (a) and (b) for all ABRs in each of said areas.

5. (original) A system for configuring OSPF protocol routers when a router is being added to a network of existing routers, comprising

a network management system (NMS) connected to each of said routers in said network and to said router being added to said network,

said NMS being arranged to analyze said router being added to said network to determine if it is not an area border router (ABR) or if it is already connected to a network backbone,

if said router being added to said network or its neighboring router is an ABR and is not already connected to said network backbone, said NMS being further arranged to establish a virtual link through said router being added to said network to said network backbone, and, if a virtual link cannot be established through said router being added to said network, to establish a virtual link through a neighbor of said router being added to said network to said network backbone.

6. (original) The system of claim 5 wherein, if complete configuration is desired, said NMS is arranged to perform said configuration so that virtual links are established from both said router being added to said network and its neighboring ABR.

7. (original) Apparatus for automatically detecting and configuring virtual links in a new OSPF router being added to a network of OSPF routers, comprising a

network management system (NMS) connected to said new router and other routers in said network, said NMS arranged to

(a) analyze said new router to determine if it requires a link to a network backbone,

(b) attempt to establish a virtual link through said new router, said link being extended to said network backbone, and

(c) if a virtual link cannot be established through said new router, establish a virtual link through a neighbor of said new router to said network backbone.

8. (original) Apparatus for reconfiguring OSPF protocol routers in an existing OSPF domain, wherein said routers are grouped into a plurality of areas, said apparatus comprising

(a) means for analyzing area border routers (ABRs) in each said area, in turn, to determine if each area contains at least one ABR connected to the network backbone,

(b) means for establishing a virtual link between an ABR in said area and said backbone if at least one ABR in an area is not connected to said backbone, and

(c) means for repeating the analysis and establishing virtual links for all ABRs in each of said areas if complete configuration is desired.